

IN THE CLAIMS:

Page 29, before Claim 1, delete:

CLAIMS

Page 29, before Claim 1, insert:

WHAT IS CLAIMED IS:

Please cancel claims 1-14 without prejudice or disclaimer, and substitute new claims 15-28 therefor as follows:

1-14. (Canceled)

15. (New) A device for crossing optical beams, comprising:

at least a first input optical waveguide directed along a first axis (x_1) and a second optical waveguide directed along a second axis (x_2) inclined with respect to the first axis;

an optical crossing region at the intersection of said first and second axis;

and

a photonic crystal having a regular periodicity in said optical crossing region.

16. (New) The device according to claim 15, further comprising a first and a second output optical waveguide opposite said first and second input optical waveguide with respect to said crossing region and directed along said first and second axis, respectively.

17. (New) The device according to claim 15, wherein said first and second axis have the same direction of a first and a second crystal axis, respectively.

18. (New) The device according to claim 15, wherein said first and second axis are perpendicular to each other.
19. (New) The device according to claim 18, wherein said photonic crystal extends in a square or rectangular portion of an optical integrated structure and wherein said first and second input optical waveguides are coupled to respective edges of said portion.
20. (New) The device according to claim 18, wherein the photonic crystal has a periodic array of holes arranged according to a square geometry.
21. (New) The device according to claim 15, wherein said first and second directions define an angle of $\pi/3$.
22. (New) The device according to claim 21, wherein said photonic crystal extends in a substantially hexagonal portion of an optical integrated structure and wherein said first and second input optical waveguides are coupled to respective edges of said portion.
23. (New) The device according to claim 21, wherein the photonic crystal has a periodic array of holes arranged according to a triangular geometry.
24. (New) The device according to claim 21, further comprising a third input optical waveguide directed along a third axis that intersects said first and second axis in said crossing region.
25. (New) The device according to claim 24, further comprising a third output optical waveguide opposite said third input optical waveguide with respect to said crossing region and directed along said third axis.

26. (New) The device according to claim 15, wherein at least one of said first and second input optical waveguides is an integrated waveguide.
27. (New) The device according to claim 15, wherein at least one of said first and second input optical waveguides is an optical fibre.
28. (New) The device according to claim 15, wherein said optical beams have predetermined wavelengths, wherein the photonic crystal is made of a bulk material having a first refractive index and includes a periodic array of regions having a second refractive index different from the first and having predetermined dimensions, and wherein the difference between said first and second refractive indices, the dimensions of said regions and the period of said array are so related to each other and to said wavelengths that, starting from an isotropic distribution of the wave vectors of said electromagnetic radiation within a first angular range that is twice the angular extension of the first irreducible Brillouin zone of said photonic crystal, the group velocity vectors corresponding to said wave vectors are rearranged during propagation in said photonic crystal that at least 50% of the group velocity vectors are directed within a second angular range that is about one-third of said first angular range and the width at half-maximum of the distribution of the modules of the velocity group vectors is lower than about two-thirds of said second angular range.